The PHOTO-ERA

LIBRARY OF CONGRESS
RECEIVED
FEB 6 190
PERIODICAL DIVISION

ILLUSTRATED MONTHLY

THE·AMERICAN·JOURNAL·
OF·PHOTOGRAPHY

OSTON·PHILADELPHIA·CHICAG

For the new year
Just begun

We offer, as heretofore,

The very best photographic lenses

that have ever been made, viz.

Voigtlander & Son's

Euryscopes:

FOR
PORTRAITS
GROUPS
VIEWS

LINE-WORK, HALF-TONE, ETC.

Constructed in Series II, III, IV, V and VI, designed and found unsurpassed for every requirement in the entire range of photography . .

In response to inquiries we cheerfully give the best of advice, as we are entirely familiar with the practical side of photography . . . .

Send for descriptive price-list to the sole importers and agents . . . . . .

BENJ. FRENCH & CO.

319 WASHINGTON STREET, BOSTON, MASS

Opposite the Old South

TABLE OF CONTENTS

ILLUSTRATIONS.

The Wayside Inn	*Alvin Langdon Coburn*	*Frontispiece*
A River View	*Arthur Hewitt*	283
Bellerive, Lake Geneva	*Dr. Zoppino*	293
Interior	*Sarah J. Eddy*	296
"	*H. W. Taylor*	297
"	*Sarah J. Eddy*	298
Celia Thaxter's Room—Isle of Shoals	*Guy H. Little*	299
Interior	*W. B. Harsel*	300
Garden of Out o' doors	*Oscar Von Engeln*	301
" " the Woods	" "	302
" " the Fields	" "	303
" in the Lowlands	" "	304
Lake Geneva	*La Belotte*	306
Cattle Scene, Arcadia, Mo.		308
Siesta at Taormina, Sicily	*Count Von Gloeden*	310

ARTICLES.

Printing on Gaslight Papers	*J. R. Schmidt*	283
Photography for Profit	*" Profitable Advertising"*	286
Practical Art Study in Photography	*Jas. Stuart Campton*	291
Substitue for Alkalies in Developers		293
Interior Photography	*Frank R. Fraprie*	295
Gardens of Out o' doors	*Oscar Von Engeln*	301
Plain Talks with Beginners—Dark Room, Loading Plate holders,		305
Bibliography of Photography	*Adelaide M. Chase*	319

DEPARTMENTS.

Foreign Abstracts; The Crucible: Round Robin Guild; Notes and News; Editorials.

Everything for the Camera.

Developing, Printing and Enlarging.

"GRAVURA" New Brand of

Paget Prize Lantern Plates or Lantern Slides

by simple development only, they give a great variety of colors ranging from Blue-Black, through Browns and Sepias, to brilliant Red Chalk. All operations may be carried out in ordinary gas-lighted room

The lightest tripod in the world, weight 15 ozs., length when extended, 4 feet; closed, 14 inches, made of aluminum.

Lumiere's Persulphate Ammonia for Reducing.

Telephone, 1117 John.

Send for catalogue. P. E.

WM. C. CULLEN,

Sole Agent for U. S.

61 William St., New York.

Branch: 640 Madison Ave.

Established 1882.

THE WAY SIDE INN,
SUDBURY, MASS.
By ALVIN LANGDON COBURN.

FEB. 6 1902
COPYRIGHT ENTRY
CLASS XXc. No.
COPY B.

PHOTO ERA

THE·AMERICAN·JOURNAL OF·PHOTOGRAPHY

VOL. VIII FEBRUARY NO. 2

Printing on Gaslight Papers

J. R. SCHMIDT

WITH the advent of the slow bromide papers, of which the well-known "velox" and "decco" papers are descendants, comes the reviving of the photographic interest among thousands of amateur photographers who had found it impossible to secure the time needed to utilize the sunlight for their printing. As a result, hundreds heretofore were compelled to either resort to the expensive method of letting others "do the rest," or, on the other hand, gave up the hobby entirely.

These slow bromide papers, of which there are nearly a dozen varieties on the market, now enable the amateur to utilize his evening hours in printing the pictures which he is too busy to make during the day, and the process is one of the utmost simplicity and of fascinating interest. A dozen negatives can be printed in from one-half to one hour's time, and the process lends itself to many alterations of tones and effects, only limited by the artistic taste of the amateur, while, if desired, the negative may be printed plain, and the results will be of the utmost permanency, and have those characteristics which are so greatly admired and sought after in the expensive platinum prints.

From the fact that the image is not visible on these papers after exposure to light, but must be gradually developed by the application of a suitable developing agent, there is an uncertainty as to results, which, from the lack of following a few simple instructions, generally ends in a failure, and secondly, the condemning of the paper. For those who have met with this trouble, or any failure to get desired results, the following may prove interesting and possibly profitable. It may not prove to be the best for all workers, but it gives me results that are equal to the best, and the loss from ruined prints is reduced to a minimum. One great advantage of these papers is, that the entire process from beginning to end can be performed in any room, on any kind of a table, without the least bit of mess or sloppiness resulting therefrom.

First spread some newspapers on the table, and then place side by side three porcelain trays somewhat larger than the size of pictures to be printed. In one pour clear water to the depth of one inch or more. The center tray remains empty and should be perfectly clean, while the third on the right contains the "fixing" solution. The developer (two ounces is enough for a dozen 4 x 5

prints) may be placed in a glass or small dish. If you do not care to mix it yourself, and keep a stock solution on hand, it may be purchased in the form of "M. Q." tubes, and the contents dissolved in water according to the directions. This will give a developer as good as the best, but, of course, it will be necessary to add ten per cent bromide of potassium solution to keep the whites of the picture perfectly clear and brilliant. The best way to add this solution is to add a few drops at a time, and then test by dipping a strip of the sensitive paper half-way into the developer. Repeat this, using a new strip each time, until enough bromide is added to keep the dipped end as white as the undipped, after the same has been immersed in the developer for one minute.

Now you are ready for printing. Keep the package of sensitive paper in subdued light. Do not let the light from the lamp or gas jet fall directly on the paper, but keep it several feet away from the source of light in the shadow of some object. No invariable rule can be given as to timing the exposure; for different lights, different kinds of paper, and negatives of varying quality, all call for different exposures. Before printing full sheets of paper, it will be well to take a small piece, about one inch square, and cover some important part of the negative. Now, with your watch in hand, expose this small piece as if it were a whole sheet. Give an exposure of half a minute to begin with, at a distance of one foot away from the source of light. Develop the small piece of paper (after you have dipped it in the clear water and placed it in the tray left empty for that purpose) by swabbing its sensitive surface with a tuft of cotton or wide camels-hair brush dipped into the developer. When, after several attempts at timing in this way, the small piece develops evenly and slowly without turning too dark toward the end of development, the time noted on the watch in minutes or seconds during the exposure will be approximately correct for that negative. This preliminary work of getting the correct time will save lots of full-size sheets, and therefore the first print can always be a perfect one.

Having the time, we can now proceed to print from that negative, and all others of the same density, without fearing wrongly-timed exposures. Place a sheet of the sensitive paper, without exposing it needlessly to the light, into the printing frame, and time it exactly the same as the small piece of paper at the same distance from the light as before. After making the exposure soak the sheet in the clear water for a few seconds, until it becomes limpid, and then place it in the empty tray. Now with the tuft of cotton, or the camels-hair brush, which has been dipped in the developer, brush the sensitive surface quickly from left to right and up and down, trying to cover the whole surface in the shortest possible time with a uniform coat of developer. The developer thus applied, mixing with the water on the surface of the paper, forms a weak developer and the image, under the influence of this, will appear in about two seconds' time and develop slowly and uniformly under complete control of the operator. Swab up all excess developer from the print, and if there are any parts that remain weak, a little fresh developer applied locally will bring them up to the required density. This method of starting with a small quantity of very weak developer, and gradually working up (if need be) to the standard solution, has the advantage of giving complete control over the slowly developing image, and few prints, if any at all, will be ruined. Over-exposed sheets, or those having

been fully timed, will generally develop into good prints with the first application of weak developer. When the image has developed to the most artistic point, remove the print from the developing tray, and after rinsing it in the clear water, to wash the developer from the surface, immerse it edgewise, and face up in the "fixing" solution. Keep it moving for a few seconds in order to make sure that the fixing bath has acted equally on the entire surface, and that there are no bubbles forming which would cause stains. This precaution must not be neglected. Fifteen minutes in this solution, and one hour's washing in running water, or its equivalent, eight changes of water in one hour, will give a print that will be as good in twenty years as the day it was made.

All of this work may be carried on within a few feet of the printing light, and enough light may fall upon the developing tray to allow the operator to read ordinary newspaper print without straining the eyes. This method of making pictures by artificial light may appear rather lengthy and complicated to some, but in practice it is simplicity itself. After once tried, the amateur will enjoy printing his kodak negatives during his spare evening hours; and the proverbial "letting some one else do the rest," will be found to be the most interesting part of picture-making with the camera.

RIVER VIEW. By Arthur Hewitt.

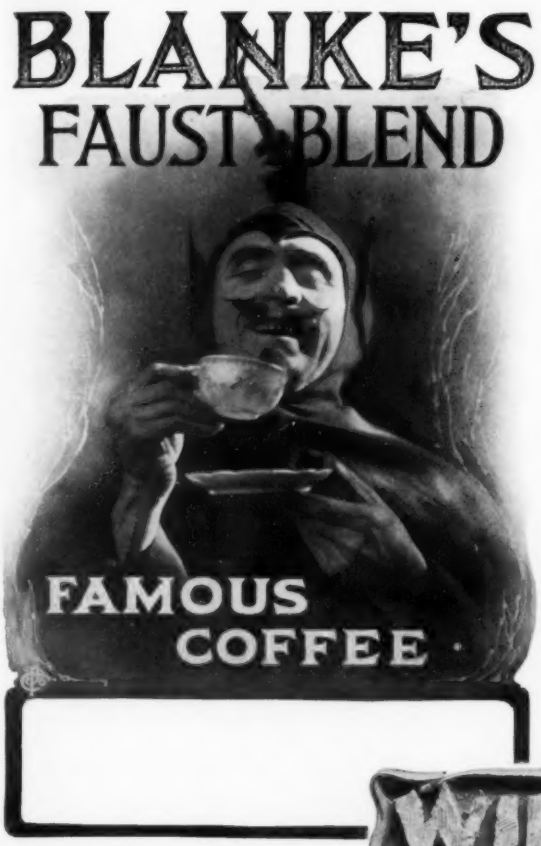
Photography . . for Profit . . .

Being a series of facts about the Commercial Art Bureau of the Ladies' Home Journal with original designs from photographers . . . . . .

PHOTOGRAPHY FOR PROFIT is a subject of intense interest to all who make pictures successfully. The cost of plates and paper is oftentimes a matter of serious consideration to the amateur, and any suggestion of how to turn this account from a debit to a credit is gladly received. The publishing business is one of the most promising outlets for this kind of work, because publishers, in their turn, can turn it to profit, while the advertising bureau, using attractive designs, can always find a place for using photography to advantage in its various appliances and departments. We are indebted to "Profitable Advertising" for the privilege of reproducing an article on the commercial art bureau of the "Ladies Home Journal," which it recently investigated with a view to giving the results to its readers.

"The advertising art bureau is a distinct development of modern journalism, brought about by the requirements of modern publicity. Its field of usefulness is a broad one. Not only does it furnish practical assistance to advertisers in the preparation of design, but it also enhances the artistic beauty of the publication, and thus makes the latter of far greater value to those who use space therein.

"As originally conceived, the advertising art bureau of these publications, the "Ladies Home Journal" and "Saturday Evening Post," had a three-fold object: 1, to develop new advertisers; 2, to produce more artistic advertising ideas; 3, to preserve a high standard in the appearance of the publication. As the idea became better known and understood the work of the bureau increased, until it reached a stage of large facilities, excellent equipment, and assured permanency. Today it is unquestionably one of the best art departments in the country. It has all the modern appliances for the production of designs and plates, and is in charge of an experienced advertising man, one who has practical ideas about the effective combination of commerce and art. It is necessary to have such a man to guide the artists and keep in mind the practical side of designing, for when the artist is left to himself, he invariably produces effects so artistic in themselves as to detract from the prominence of the article advertised. A corps of competent designers is per-



manently employed in the bureau. Each one is selected because of his particular qualification for some special line of work, and thus a variety of styles and ideas is secured.

Every method is used in the production of the designs— wash, pen and ink, photography, etc. — depending chiefly on the character of the article and the manner in which it is to be advertised. Specimens of each method are shown on this and the following pages. The Faust Blend Coffee design is a photographic reproduction, with decorative touches and lettering added by the artist. The Williams' Shaving design is modeled in clay. the articles shown being photographed direct. The two pleasing Heinz advertisements on pages 288 and 289

are good examples of the camera's work combined with the artist's brush, while the Fine Art Toilet Soap panel on page 290 is purely photographic, with the exception, of course, of the lettering. The Colgate and Sapolio designs on page 290 are from a wash drawing and an elaborate photograph, respectively. All these specimens were conceived, designed, and executed by the art bureau and they give an excellent idea of the quality and variety of work turned out by this department.

It is interesting to note that of all the methods used, some of the finest effects are secured by photography direct from

models, or the articles to be advertised. During the last year or so this branch of the art has been wonderfully developed, and photographic designs are becoming more and more numerous. In preparing an advertisement, by means of the camera, light and shade as well as posing and surroundings, must be carefully considered. By a judicious manipulation of these features, beautiful and attractive results may be secured, giving to the article all necessary prominence, and making an advertisement that will please the reader. Living models are a very important element in this work, but are not always easy to obtain. This is especially true of children, there being few children able to grasp the situation and to follow instructions as to posing, while the best of them require much time and patience on the part of the operator in order to accomplish what is wanted. Frequently a dozen plates are exposed in rapid succession before a negative that can be utilized to the best advantage is secured. The chief ambition of the photographer is to get young women of refinement to pose. A refined model always makes the best subject for any article, and the resulting picture appeals to the highest class of readers. Actors and actresses generally make excellent models, being able to pose for a number of different subjects at one sitting. An example of this is found in the Faust Blend Coffee and Sapolio designs, in which Mephistopheles and the tramp were both posed for by one person. Often parts of different photographs

HEINZ
For the Christmas Pie
GOLD MEDAL
HEINZ'S
MINCE
MEAT
"ONE OF THE 57"

are combined to produce one figure in a design. When the pose is good, while the face is poor, or an arm is not in correct position, a face or an arm from another photograph is substituted to secure the desired result. Photography as applied to advertisement designing has been brought to a high stage of perfection by the art bureau of the "Ladies Home Journal" and "Saturday Evening Post," and it has produced many notable specimens of this class.

In all its work the art bureau takes the greatest care to make originality a prominent feature. Occasionally, however, it will happen that similar ideas emanate from different sources almost simultaneously, without the least intention on the part of either artist to infringe on the other. This happened with the Sapolio design. A lead pencil sketch of this had been made some time before the design was finished, and in the meantime there appeared in the magazines another Sapolio advertisement embodying the tramp idea.

To prevent the duplication of designs, for the same lines of goods, an index system, files and scrap-books are used. The advertisements are clipped from the standard magazines each month, sorted according to their special headings, indexed and placed in scrap-books for ready reference.

Practical Study in Photography

JAMES STUART CAMPTON

THE mountain would not come to Mahomet, so there was nothing left for Mahomet to do, but to go to the mountain, This, in brief, has been the history of photography in its relation to art. Since the days when he first placed his work before the public, the photographer has found a deep and seemingly impassable gulf between himself and the artist. If he even ventured to halloo to the other side, the most that he would receive was a withering glance, calculated to blast him in his tracks.

But the photographer was not made of the fragile material that would collapse, even under the frown of the artist. He endured, and went his way uncomplainingly. In time, he began to grow and expand, until he found the ground too narrow on his side of the gulf. So, summoning all his strength one day, he took a flying leap, blindly and desperately, to be sure, but he landed on the other side. The shock was rather severe, at first, and he still continues to wobble at times and make false strokes, but he is on the right side, and he is there to stay; no power will ever draw him back!

But so rapid has been the advance of the photographer, that he still looks in vain for general recognition among artists. The most of them ignore him, or regard him as an interloper in his assumption of equality with them. However, some of them are casting side-long glances in his direction when they think no one is looking, and, amazed at beholding work that bears the unmistakable stamp of artistic feeling and originality, are beginning to rub their eyes, and exclaim, "What! is it possible that these fellows have souls? these tricksters! these mechanics! these squatters on our sacred domains!" Ah! they have not yet fully learned the lesson that it is the man and not the medium that makes the picture!

Having been associated considerably with photographers, not as one of them, but as an art student, I have been asked to criticise their work from the standpoint of the artist. In the great variety of photographs that have been shown me, good, medium and bad, one could detect the same earnest effort and sincerity of purpose, to reach out after truth, and to bring their work up to a more artistic plane.

Still, while I have oftentimes been amazed at what has been accomplished, I could not help recognizing that artistic photography is in its very infancy, and that the average photographer has much to learn before he can be counted upon at all times to work with intelligence, without which, natural ability, however great, is powerless.

The chief thing that has impressed me is, that the photographer has heretofore begun at the wrong end, seeking to master the mysteries of the camera and dark room first, while composition has been taken up last, if at all. Frequently it has been left to take care of itself, which it has generally done, by giving the studio of that individual a wide berth.

I have strongly advocated a thorough course in an art school, in drawing from life. Not because every man may be able to satisfy himself with a pleasing and accurate drawing, but because one can gain in this way, better than in any other, a knowledge of the human figure, and an appreciation of its beauty, and the harmony of lines and values. If

he but possess these, it will be impossible for him to produce the crude and trying effects that have so long marked the average photograph.

However, the majority of photographers find it impossible to attend an art school. Some do not have access to one, while others cannot spare the time, or feel, perhaps, that they are too old to begin. Yet the need of technical knowledge is pressing and immediate with the man who means to be progressive; for he is bound to experiment, and he should be able to do it intelligently, else he may find a pleasing subject posed correctly, but all out of key as to lighting, or a picture with a beautiful tone, but with a hard, bad line that will rise up and swear at him.

It was to meet such a need, that the idea of forming a class for the study of composition occurred to me. It seemed to me that if the services of an artist of recognized ability could be secured, who would lecture on composition and its application to photography, a great amount of benefit could be gained. Accordingly I called upon Mr. Eric Pape, of Boston, the well-known artist and illustrator, and explained my plan to him. He was impressed by the value and practibility of the scheme, and expressed his willingness to undertake the instruction of the class.

The idea was then presented to the members of the Lens and Brush Club, of Boston, and was received by them with immediate favor, and a sufficient number at once agreed to join the class to warrant its organization.

The first meeting was held on Wednesday evening, January 8, at Mr. Pape's school, corner Massachusetts Avenue and Boylston Street. There were present about twenty-five photographers, among them many of the leading men of Boston and vicinity.

Mr. Pape began at the very foundation of composition, and with the aid of photographs and reproductions of great painting, illustrated his ideas on primary and secondary interest in a picture. At the next meeting the composition of line was treated in the same manner. Many important principles were explained, and were listened to with the closest of interest and attention by those present. The talk for the third lesson will be on the composition of lines in the human figure, and Mr. Pape expects to make use of one or two professional models to illustrate his points. This will be followed by some time given to answering questions by the photographers, criticising their photographs, suggesting composition, or whatever may be most practical as wise application of art to their needs.

It is planned to hold the class every Wednesday evening, for a term of thirteen weeks. While the idea is evidently a new one, it starts in with every promise of success, and as photographers come to realize the practical benefit of such a movement, the membership will undoubtedly increase, together with the interest and enthusiasm.

It is hoped that the idea will commend itself to photographers generally, and that wherever it is possible, a similar class may be started. It is not our aim to make a photographer a producer of startling "freak" effects, but to give him the knowledge, whereby he may be able — no matter what price he receives for his work — to observe the correct principles of line, lighting and posing. With such knowledge, he can make all his work picturesque, and if the character of the subject forbids a work of art, he can at least, so treat it that its bad points will not offend, or be accentuated by injudicious use of his means of expression.

The start has been made; I trust

it will ultimately end in the establishment of an art school where the young photographer can become a student of the broadest principles of art in their relation to his profession. This would have a potent influence, not only on the photographer, but on the customer who receives his work, and help to lead the way to the time when this great country of ours will be illumined by something besides liberty, and we shall be not only a commercial, but an artistic and art-loving people.

BELLERIVE, LAKE GENEVA. By Dr. Zoppino.

Substitute for Alkalies in Developers

Messrs. Lumiere & Seyewitz have studied the action of acetone as a substitute for alkali in developers, and have shown that in the presence of sulphite of soda, acetone brings out the latent image as well as the alkalies. Acetone, sulphite of soda and water together have no action upon an exposed plate, but upon adding a developing agent their action begins at once. After many experiments, the following formula has been found to be the best:

Water	100 cc
Sulphite of soda (anhydrous)	5 grams
Acetone	10 grams
Pyro	1 gram

The above formula gives very brilliant negatives having a rich gradation of values in the shadows. Any change in the quantity of acetone or of sulphite gives inferior results.

The color of the reduced silver is a warm black, not the blue black given by diamidophenol, and is permanent, the negatives never having the yellowish color often obtained with pyro and an alkali. Acetone gives the same range of development as carbonate of soda. When a plate is known to be overexposed it should be immersed in a bath composed only of pyro and sulphite, and the acetone added little by little until

the image appears. Development then proceeds gradually, and a satisfactory negative may be obtained, notwithstanding the overexposure. This developer has to be kept in closed bottles.

For ordinary use, the best way is to make a concentrated solution of sodium sulphite 20 grams, pyro 4 grams, in water 100 grams. For a normal developer take 25 cc of the stock solution, 75 cc of water, and add 10 cc of acetone. In case of overexposure the acetone should be added drop by drop.

The color of the reduced silver varies, according to the proportion of acetone used, from a warm black to a reddish sepia. For lantern slides and transparencies the sepia tones are often desirable.

This developer offers the following advantages:

1. As it contains no alkali, all troubles arising from the use of alkali are avoided.
2. Greater range in development.
3. Possibility of obtaining negatives of different tones by changing the proportion of acetone used.

Acetone has also been tried with paramidophenol, but the results are less interesting, for paramidophenol is not very soluble in a mixture of water and acetone; however, the following formula gives the best results:

Water	1000 cc
Paramidophenol	7 grams
Sodium sulphite (anhydrous)	100 grams
Acetone	150 cc

The paramidophenol is first dissolved in the solution of sodium sulphite and then the acetone is added. The solution is colorless, and keeps without alteration in open bottles.

Formaldehyde has been found by Messrs. Lumiere and Seyewetz to act in the same way as acetone does, though the results are more like those given by caustic alkalies than the results obtained by using the carbonate alkalies. With pyro, formaldehyde has a tendency to give flat negatives. The developer is quickly oxidized, and takes a purple color when in use.

With hydrochinone good results may be obtained by using a developer made as follows:

Water	1000 cc
Sodium sulphite (anhydrous)	150 grams
Formaldehyde 40 per cent	20 cc
Hydrochinone	15 grams

This developer has a stronger action than one made with acetone. The negatives are contrasty, as much so as when hydrochinone and caustic alkali are used. It leaves the films hard and in good condition. This is a good formula for reproductions of manuscripts and line work. Ethyl aldehyde acts in the same way as formaldehyde. It gives poor results with hydrochinone when very contrasty negatives are desired. In the above formula, instead of 20 cc of formaldehyde, 30 cc of ethyl aldehyde should be substituted.

Aromatic aldehydes, acetones, and paraldehyde, have also been tried, but without practical results.

Interior Photography

FRANK R. FRAPRIE

AT this season of the year the amateur photographer is wont to find that his camera is of little use for outdoor work, and as a consequence he is likely to turn to indoor photography as an outlet for his photographic energies. Of course, most of his efforts in this line are directed to portraiture, and justly, for the most fascinating part of the "art preservative" is the recording of the likenesses of those near and dear to us. But when sitters are not available, we often find that it is an interesting occupation to reproduce the familiar scenes of our daily life, or the interiors of our friends' homes.

The photography of a room seems a simple task to those who have not attempted it, but those who have experience will bear witness that there are many easier things in photography. The conditions are so various that only one who has thoroughly mastered the technique of the art in other directions can hope to get uniformly successful results, and even the expert will not always be able to judge exposures correctly.

The first point for consideration is the character of the camera to be used. Naturally the man who has but one will use it, and do the best he can, but for uniformly good results, it will be necessary to use a camera with extensible bellows, and ground glass, so that the picture may be carefully studied before it is taken. For the utmost convenience, a square bellows and a reversible back are the proper thing; as the camera often has to be placed in very confined quarters, things should be capable of such arrangement that the slide can be drawn from any one of the four sides. The camera should have generous rear swings, both horizontally and vertically, in order to keep the plate vertical when it is necessary to tip the camera, and both vertical and lateral slides to the lens board, in order to be able to change the field of view, especially in high rooms. With a reversible back, only one adjustment is necessary at each end. If wide-angle lenses are to be used, the base board should be so hinged that it can be dropped forward out of the way, or else the whole camera should slide forward to the extreme front of the bed. Otherwise the bottom of the view will be cut off.

The use of wide-angle lenses should be avoided whenever possible. The normal field of view of the human eye is about 50 degrees, and the lenses furnished with most of the ordinary "hand and stand" camera have about this angle of view. The perspective of pictures taken with them and viewed in the ordinary manner is usually agreeable. The pictures, of course, should be looked at with the eye at a distance equal to the focal length of the lens, but with a 50 degree angle of view, little violence is done to the perspective when seen from the ordinary distance of twelve or fourteen inches. The case is quite different when the wide-angle lens is used. The angle of view in this case is from 90 degrees to 110 degrees, and it is absolutely essential to place the eye at the proper view-point in order to get a correct effect of perspective. This is inconvenient and disagreeable, and with large pictures, it is impossible to see the whole under such conditions. If the picture taken with such a lens is viewed in the ordinary

manner, it has a wholly unnatural effect. The scene represented appears to have gained in depth and to have lost in width, and right angles become obtuse or acute, according as the sides approach or recede from the spectator. For these reasons it is advisable never to use a wide-angle lens unless the place to work in is so confined as to render its use essential. The particular make of lens is a matter of little importance. Any of the lenses made by reputable firms will do good work. The responsibility lies with the worker, not with the lens.

As to the plates to be used, there is only one circumstance which will render advisable any departure from the choice which one usually makes. This is the frequent necessity of adopting some means for the prevention of halation, an evil met perhaps more often in interior photography than in any other single department of the art. This is because we must often include windows in the picture. Halation is due to two causes; the reflection of light from the surfaces of the support of the sensitive film, and the scattering of light by multiple reflections among the particles of the emulsion. The latter kind of halation is most evident in overdeveloped plates, and is to be avoided by giving normal exposure, which will enable the development of the image to be completed before the much fainter effect of this light-scattering becomes very noticeable. The other kind of halation, reflection back into the film, is much more important, and must be gotten rid of by special manipulation of the plate. There are two methods in vogue; coating the plate with more than one layer of emulsion, and backing. The theory of the first method is, that if a plate is coated with two or three layers of emulsion, progressively more rapid from the glass outward, all the details will be recorded by the exterior rapid coat, while the energy of the more powerful rays

By Sarah J. Eddy.

By H. W. Taylor.

will be absorbed by the slower coating behind, so that few or none will arrive at the glass to be reflected. In development, the scale of values will be much reduced, for the plate is fixed when the details have received full development in the outer coating, at which stage the high lights in the lower coat are not nearly brought out.

The method of backing assumes that the back of the plate shall be coated with a substance of as nearly as possible the same index of refraction as glass, and opaque, so that the rays reaching the back shall pass into it and be extinguished. No backing entirely fulfils these conditions, but the best is the mixture of caramel and burnt sienna with gum arabic, which has been used for many years. A formula which is as good as any is this: caramel, 1 ounce; gum arabic solution, forty per cent, 1 ounce; burnt sienna, dry, 2 ounces; alcohol, 2 ounces. Mix thoroughly and see that no lumps are present. The coating of the backs of the plates with this is a very messy operation, and many will prefer to buy plates already backed, which can be done in the "Lovell" brand.

In practice neither of these methods will completely attain the desired result, and it is advisable to combine them. The ideal non-halation plate would be one which should be coated first with a layer which would entirely absorb the light rays and which should be of the same refractive index as the sensitive film; it should be at the same time of such a composition that either the developer or the fixing bath would completely dissolve or decolorize it without any deleterious action upon the plate. The ideal substance would be a red acid dye, a salt of a colorless base which would be completely bleached by the alkali of the developer, but such a coloring matter is as yet unknown. If such a substance could be found, and the

plates be first coated with its solution in gelatine, and then with a gelatine emulsion, perfection in non-halation plates would be attained, for the excess of light would pass completely into this film and there be entirely absorbed, and the color would be wholly discharged in developing, so that the printing qualities would be perfect.

Another method of avoiding halation is by using negative films coated on paper, which are now obtainable in the market, and which print nearly as fast as if coated on glass. Celluloid films, having a black paper backing, are to a certain extent endowed with non-halation qualities, but do not compare in this respect with coated plates, as the backing must be in optical contact for the best results.

It is often possible to choose the point of view so that no windows, or other strong sources of light, enter the picture. In this case it is not necessary to use specially prepared plates, and often more rapid plates can be employed than would otherwise be possible, so that the exposure can be shortened. While one should endeavor to so choose the point of view as to make the composition as good as possible, circumstances often so limit the possible stations that there is little choice. The endeavor should then be to make the picture as nearly as possible what one normally sees. It is better to make two views from different points than to use an extreme wide-angle lens.

The best light is one from the side. If the camera is placed with its back toward the windows, the resulting picture is likely to be flat. If the camera has to face the windows, besides halation, the contrasts are almost sure to be harsh and unpleasant. This may be partially obviated oftentimes by drawing the shades of the windows and giving a

By Sarah J. Eddy.

By Guy H. Little.

greatly increased exposure, and then finishing off with two or three seconds during which the curtains are up. A flashlight may sometimes be advantageously employed to light up the deep shadows. A room in which the lighting by day is bad may often be taken better by flashlight. If two or three flashes in different parts of the room are employed, the shadows will be much broken up. If a flashlight picture be taken at night, and the camera be left standing until the next morning, a second exposure of the proper length for an outdoor exposure will give the landscape visible through the windows a good rendering without danger of halation. Such a picture is especially pleasing, but in order to be sure that your camera is not disturbed, it is always advisable to lock it up over night.

The arrangement of the furniture should be disturbed as little as possible, but care should be taken that objects of furniture near the camera do not intrude unpleasantly, and necessitate the trimming off of a large part of the bottom. Great pains should be taken that no reflections from pictures or mirrors enter the lens. Pictures should be propped out at one corner if necessary. A mirror is usually bad, as, if large, the reflections are confusing. On the other hand, a large mirror may often be used in photographing a small room, which could be gotten in no other way.

The development of interiors should always aim at softness. For this purpose it is advisable to start development with strongly diluted developer, and use great patience in coaxing out the details. If necessary, vigor can then be obtained by a short treatment with fresh and strong solution. Any developer will accomplish this result if skilfully used, and personal preferences need not be set aside.

The two illustrations by Miss Eddy are interiors at the Willow Brook Farm, a summering place in Portsmouth, Rhode Island. The delightful colonial interiors bear witness to the good taste of Miss Dennis, the proprietor, and have been most admirably photographed. The pictures are models technically, and avoid all the common faults of interior work. Despite the fact that one of the pictures shows two windows, there is not the faintest trace of halation, and the furniture has been so skilfully disposed that nothing obtrudes unpleasantly in the foreground. Mr. Taylor's bedroom is a good example of photography in cramped quarters, yet the perspective is perfectly natural. The treatment of the window, showing the exterior landscape, is worthy of praise, and the reflections from the numerous pictures and mirrors are fortunately free from very high lights.

Mr. Little's picture is a photograph of the room formerly occupied by Celia Thaxter, at her home at the Isle of Shoals. This room has been kept as it was left by her, and affords an interesting proof of the taste and genius of the poet. The last picture, by Mr. Harsel, differs from the rest in that it includes figures, a much more difficult feat to perform successfully, especially when one of the sitters is a baby, as in this case. But this game of "Peek-a-boo" is very happily rendered. The disagreeable reflection in the picture unfortunately cannot be trimmed away, as the admirable composition of space would be very injuriously affected thereby. But this minor defect detracts very little from a singularly successful picture.

By W. B. Harsel.

OSCAR VON ENGELN

Illustrated by the Author

A review of the illustrations which adorn the pages of the leading photographic magazines today, will disclose the fact that much of the work produced by the average camera man is mediocre in the extreme. The landscapes are seldom more than picturesque bits; and figures, if introduced, are very apt to be gazing vacuously into space. Should there be one or more illustrations in a number which have those qualities of sentiment or "storytellingness," which are the making of a picture, they will but too often prove to be the work of acknowledged leaders in the photographic world.

What constitutes the success of these same acknowledged leaders? And why does the tyro fail to achieve pictures such as theirs? The answer to these questions is, I believe, that he lacks purpose. His technique becomes perfect, he learns to compose well, yet he fails. A definite end to work for and a basis to work on are the necessary requirements for better results from the average amateur.

These requirements the serial picture fills admirably. Its title gives a basis for work, illustrating this title an end to work for, and to accomplish this illustrating requires continued effort.

The prime requisite of any picture is a center of interest; that is, that object or those correlated objects about which the sentiment — the pleasure of the picture — lies. The series of pictures which accompanies this paper is entitled "The Gardens of Out o' Doors."

The garden is the center of interest in each picture. The plan of operation in this case was simple enough, but the carrying out more difficult. As the pictures were to be of gardens, all isolated bunches of flowers were avoided. Whenever a fine group was noted, a point of view was chosen, so that the lines of

the picture converged at the group of flowers, which was also brought into sharp focus. Pains were taken to throw the background out of focus. This last is the logical compromise with the fuzzygraph, for while we see clearly the objects toward which our attention is directed, yet its surroundings are hazy to the eye.

When life is introduced it should be kept in harmony with the picture, and in the background, except it is to be part of the actual interest. Then the motif for its introduction must be good and readily apparent.

For a series, there is a multiplicity of subjects to choose from. Only to suggest, "Evening Skies," "Americans," a series of people as they are seen on the streets — excellent work for the hand camera— the "Tides of the Brook," and so on, ad infinitum.

Speaking in a more general sense on the subject of landscape photography, it seems to me that much would be gained by our giving more attention to foreground studies. However much we may regret it, it is seldom that we can convey the beauty and sublimity of a wide stretch of country, by means of the camera. Even the ordinary view photograph, with its focus evenly divided among three places, foreground, middle distance and distance, somehow, falls flat as a rule. This is because of the rapid diminution in the size of objects on the picture as they recede from the foreground; altogether disproportionate to the real distance, as measured by our eyes.

The "near" is the thing. Aside from the technical side of picture-making with the camera, the landscape worker should gain much else. His perceptions are cultivated to appreciate the beauties of nature in all her guises, giving, wherever possible, special consideration to foreground phases. This habit accomplished, learn to differentiate between those in which the color appeals and those whose lines are truly pictorial. In other words, learn to see in black and white.

THE GARDEN OF THE WOODS.

In this place it may not be out of the way to suggest that the masterpieces of great painters have, in great majority, foreground interests as the main motif of the picture. Witness Corot's landscapes, Le Rolle's "Shepherdess," Millet's "Gleaners," etc.

Apropos of outdoor work in photography, J. Horace McFarland writes very interestingly in "Country

THE GARDEN OF THE FIELDS.

Life," laying special stress upon the necessity of simplicity and strength in this kind of work. Many pictures are failures because of the attempt to include too much, thus making them flat and complex without any strong feature. An observance of the simplest rules of composition and photographic technique, together with a good point of view, ought to make successful pictures.

"I might emphasize strongly, therefore," he writes, "in view of the fascinating field which outdoor photography presents, the primary necessity of good technique. The artist must be master of his tools.

"But while technical excellence is commendable, it is purely mechanical after all, and the result which really presents a message, and becomes truly a picture, must have other merits. It must be 'artistic,' and this much misused word may well be briefly commented upon.

"To paraphrase, 'he who would have beautiful pictures on his negatives, must see beautiful pictures with his eyes.' The camera, the lens, the plates and the chemicals — they are but tools. As with any form of art, it is the conception of the thing to picture that is primarily important. In these days of facility with things cameristic, millions may photograph, and only scores make pictures.

"Let me emphasize, therefore, to the worker in the field of outdoor photography, the necessity for a study of the best attainable pictures. Dissect a work of accepted merit; endeavor to ascertain why it is pleasing; study like effects that may come under your own observation. Do not always photograph; look, think! And when a view is selected that seems to have a reason, a message, study its make-up thoughtfully on the camera's ground glass. Consider that the composition is there presented in nature's colors, and that the resulting transcription through lens and plate will be in monochrome only. Many times the view may have to be regretfully abandoned, but the worker will have gained much.

"Of rules of composition, the placing of points of interest, the direction and intersection of the 'lines,' much might be said; but I can best again refer the ambitious worker to good pictures of any sort, whether made by brush, pencil or camera, for information."

THE GARDEN IN THE LOWLANDS

Plain Talks with Beginners

THE first step of the beginner in photography is to become thoroughly familiar with the apparatus at hand. It goes without saying, that some things have to be thoroughly understood before one can grasp the meaning of the different parts. The dry plate, or film, for instance, is tremendously sensitive to light and must not be exposed to it, even the smallest fraction of a second. The only light with which it is possible to examine photographic plates is a red one, and not all the ruby glasses in the lanterns are safe. This care in selection of dark lamps sometimes means all the difference between good and excellent results. Furthermore, cleanliness and order is essential for success in photography. If the fixing solution, for instance, slops over into the developers, spots will likely appear on the plate. Don't attribute all the defects in the plates, or films, etc., to the manufacturers. If amateurs in general took a fifth of the pains of the manufacturers to insure perfect results, there would be fewer failures.

We will assume that the novice has fitted up or improvised a dark room and is supplied with a camera, plates and plate holder of some sort. Also the necessary articles for development and printing, as are described in the direction manual of the camera. For convenience, we will give them here:

Dark lantern.
Trays (two) for developing and fixing.
Developer.
Hypo (for fixing).
Drying rack.
Washing tray or box.
Printing frame.
Printing paper (solio, albuma, etc).
Toning solution.
Trays for toning solution and hypo bath.

With this equipment the operations of the dark room ought to be successful. The dark room means a room from which all light is excluded. The door should be locked from the inside, as an accidental intruder might spoil valuable results.

Around the sides of the room should be shelves upon which are kept the various developers and chemicals. If outside light is used, the window must be glazed with ruby glass, thoroughly tested for photographic purposes.

A good dark room should have running water in a sink in the room. The fixing is best done in a tank with grooves on the sides, so that the plates fix on end. With such a box, the hypo may be left in the tank always ready for use. Such boxes may be bought made of rubber composition all ready for use, or can be made of wood, grooved and lined with asphalt paint. In the sink should be a washing-box attached to the faucet by a hose, so that water circulates from bottom to top. Thorough washing in photography is a point which is too often neglected.

Above all, attention should be paid to the ventilation of the dark room. An hour or two in a closed room, with the air used up and heated by the dark lantern, is not conducive to health. If hypo is slopped around on the floor, it takes up moisture and saturates the atmosphere of the room with dampness, which is bad for everything photographic.

Developing trays should be deep, and with noses so the developers can be poured out with ease. Porcelain trays are excellent, but are fragile and expensive, compared to the cheaper rubber and composition

ones. Papier mache should be avoided, as the wax covering soon wears off, leaving the paper to soak up developer. Glass trays are not annealed well and break easily. Glossy rubber, or composition, or vulcanite trays serve all ordinary purposes. For velox paper development, or any other where discoloration of developer should be watched, the porcelain trays are handy. Whatever trays are used, they should be carefully marked so as to distinguish them from the fixing bath.

The dark room light is of great importance. If possible, arrange a window in the dark room of ruby glass, and inside have detachable screens of opaque material and also of orange post-office paper, which may be used at will. Special plates, like isochromatic, etc., need a yellow and green glass as additional protection. If artificial light is used, it is best arranged so as to shine in through a red window. This avoids heating the dark room. The control of such light should be from the inside, however. If outside light is not possible, a lantern may be devised by using a box with a ruby glass front, which may be further protected by the post-office paper or an additional yellow glass.

The ideal illuminant is the incandescent electric, as this does not consume air from the dark room. Failing this, an arrangement for use of candle or small hand lamp must be made. The ventilation must be perfect, else the lamp will smell. All the openings, however, must be so arranged that no light escapes to fog the plates. A lantern may be purchased at a reputable stock house. These may be bought at all prices from $6, a lantern with all improvements, to 25 cents, a lantern for loading only.

The last article of equipment is a drying rack, which should be such as to take various sized plates, and in such a position as to get all the currents of moving air without any of the

LAKE GENEVA. By La Belotte.

dust. A portable rack is convenient, so that the plates may be brought out to the open air. An electric fan would add luxury to the equipment, besides making a most practical rapid dryer.

The instructions given here are written in description of plate cameras and plate manipulations. It should be remembered that the theory of the plate and the film is the same, one being a light, sensitive emulsion on glass, the other using flexible celluloid or gelatine as a support for the sensitive film.

A dark room, or its equivalent, is always necessary in loading plate holders, and the door should be locked from the inside so as to avoid interruptions while the loading is in process. Such interruptions are sometimes costly to the novice, as a whole box of good plates, or perhaps valuable negatives, may be ruined instantly. The plate holders are, of course, there, also the box of plates with which we intend to load the camera.

All plate boxes are sealed by paper which covers the joint on the box on the opposite side from the name label. By running a knife through the paper along the edge, the top cover may be removed, and another box will be seen inside. Nearly all plates have these triple boxes, although one or two manufacturers merely wrap the plates in black paper and place in the box.

For the first experiments some of the cheaper plates should be used. The first plate in the package will be glass upwards, and may be removed and examined. The dull side is the film and faces outward in the plate holder. The next plate in the box is face upwards, and it will be seen that each pair is faced together, emulsion face to face. The plates sometimes are unprotected, sometimes they are held apart by little separators.

If any doubt exists about the emulsion side, they should be lightly touched on the corner by the finger. The emulsion side is rougher than the glass, and the noise made by the finger in moving over the emulsion is entirely different from the glass side. Or wet the finger and touch a corner, the emulsion side is then sticky.

The slide in the plateholder is then drawn. There are several kinds of holders on the market. The majority of these have a spring at one end, which, on being forced back, allows the plate to drop into the holder, and presses it up under a rabbet of the holder in the opposite end. Another kind has an end which folds back, allowing the plate to fall into place. On throwing the hinged end back into place, and replacing the slide, the holder is locked together.

Be careful in replacing the slides to have the sides with light tops showing outwards. Some holder slides of old style have a light side and a dark side, the latter sometimes having the words "exposed" upon it, and sometimes with a surface on which pencil records could be made. It is a universal rule that light indicates unexposed plates, while black is the sign of plates ready for development. On the hard rubber slides of the present day, the wooden tops are painted black on one side so that the exposed plates may be detected.

Before leaving the dark room, be sure the plate box is not uncovered. The plates, we now assume, have been placed in the holders, and the exposure is the next problem.

If the camera is a fixed focus one, we place the holder in position, draw the slide nearest the lens, and after the shutter is set, we push the button for releasing the shutter. The little ground glass on the top is the finder, which is a miniature camera,

CATTLE SCENE, ARCADIA, MO.

giving an image smaller yet exactly similar to the image which falls on the plate. The finder is used to locate the image, and the button is pressed when the right object is in sight.

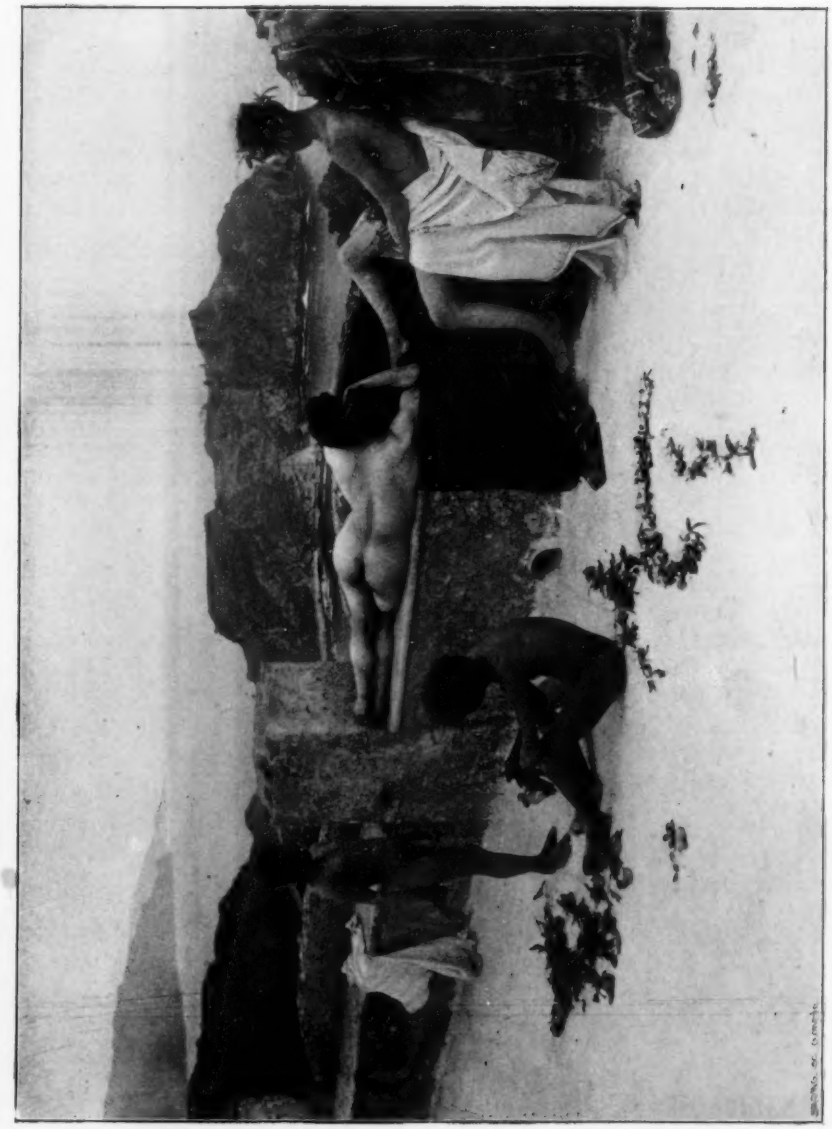
After the exposure, replace the slide, turning the slide so the BLACK top shows. Then remove the holder. A fresh plate is still left in the other side of the plate holder, so we may make another exposure.

Consequently, in all remarks about plates, the word films may be generally substituted without spoiling the sense of the instruction. We have prepared a special chapter on film manipulation which gives the special instructions for their use.

The operation of making a picture is divided into three parts, the exposure, the development and the printing. In the first operation, the exposure of the plate, one loads the sensitive plate in a plate holder, which is placed in the camera after focussing has been completed. Focussing on all cameras is not necessary, because some cameras have lenses which keep in focus all the time, and on others this is done by means of a focussing scale. The operation of focussing consists in moving the ground glass of the camera until the inverted image shows most sharply. After removing the slide in the plate holder, the plate is exposed by means of a cap or a shutter, as the case may be. The sharpness of the picture depends on the quality of the lens, and on the size of the diaphragm employed, and the length of the exposure varies with the condition of the light and the size of the diaphragms used.

The second step in picture taking, development of the plate, is carried on in an absolutely dark room. Here we should have only red light to work by, which, if not used to excess, will not injure the plates. The plate is there subjected to two operations, viz.: developing and fixing. The first makes visible the invisible image on the plate, and the second removes the unaltered silver which is left in the plate, making it transparent for printing. Various developers are used for the purpose, and the operations are usually carried out in shallow trays. After the fixing comes washing, which should be very thorough, as upon it depends the life of the plate. Then the plate is laid upon a rack to dry; and, when thoroughly dried, is ready for printing. Up to this point the plates produced are called negatives; that is, the sky is black and the foreground transparent, or just the reverse of natural conditions. If we expose this plate in a suitable frame over paper which will blacken in the light, we get as many positive copies as we choose. This process is called printing, and different photographic papers are used for different effects. The sun is not absolutely necessary for printing, as papers are on the market which print equally well by gaslight or electric light.

After the printing comes the final stage of the operation, viz.: the toning, if the paper is of the ordinary kind, or development, where the print is made by gaslight. Toning is an operation which converts the unpleasant purplish red of the untoned proof to a more permanent and pleasing color. In the gaslight printing processes, a development of the paper print is necessary, just as in negative making, and also a fixing bath which follows the development. Thorough washing is essential, just as in the negative, and after thorough drying the prints are ready to be mounted on cards or in albums.



SIESTA, AT TAORMINA, SICILY. By Count Von Gloeden.

Foreign Abstracts

Potassium Bromide and Dyed Silver Bromide The fact that potassium bromide has a great influence on dyed silver bromide (orthochromatic plates) has been long known, but little considered. Eder discovered, more than ten years ago, that silver bromide precipitated with an excess of bromide could not be sensitized by dyes. Von Hubl found that silver bromide colored with erythrosin was decolorized by potassium bromide, and this fact was again proved by Luppo-Cramer. As there is probably a new chemical compound concerned, it seems likely that the amount of potassium bromide in the developer for orthochromatic plates is of great importance, and may explain many poor results. Cramer found that silver bromide dyed with erythrosin is not decolorized by sulphates or carbonates, which is also of importance to the theory of the developer. These reactions apply only to the colors of the eosin series. (Phot. Chronik, 1901 : 635.)

Test for Hypo In order to test the wash water from plates or paper to see if it still contains hypo, add to a small quantity a piece of zinc and a dozen drops of hydrochloric acid. After a moment or two drop a little of the solution on filter paper which has been wet with a solution of acetate of lead. If the paper turns brown or black, the wash water contains hypo, and the plates must be washed longer. The whole test requires little longer than a test for acidity with litmus paper. (Phot. Chronik, 1901 : 535.)

Glycin and Pyrocatechin A. Freih. von Hubl gives the following formulas for developers :

I. Glycin with potassium carbonate.—25 g sodium sulphite and 10 g glycin are dissolved in 40 cc of water, and 55 g of potassium carbonate are added little by little, to avoid foaming over. There are thus obtained about 75 cc of a creamy paste which keeps very well, and is to be strongly diluted with water for use, and thoroughly shaken. After a time, the concentrated solution becomes brown, without affecting its developing power.

II. Glycin-potash.—14 g potassium metabisulphite and 14 g caustic potash are dissolved in 80 cc water and 10 g glycin added slowly. Keeps well.

III. Pyrocatechin-potassium carbonate.— 10 g potassium metabisulphite and 15 g potassium carbonate

SIESTA, AT TAORMINA, SICILY. By Count Von Gloeden.

are dissolved in 40 cc water and 6 g pyrocatechin added. It is then mixed with 35 g powdered potassium carbonate, and well rubbed together in a mortar. A cream which keeps well.

IV. Extremely rapid pyrocatechin developer.— Dissolve 100 g sodium sulphite and 14 g caustic soda in 300 cc water, and separately 20 g pyrocatechin in 100 cc water. Pour, when completely dissolved, the pyrocatechin solution into the soda solution, and immediately fill small bottles, which must be tightly corked.

For snap-shots use IV. diluted with 10 parts water, or II. with 25 parts. Temperature 60° F. The addition of bromide is not allowable. IV. requires 3 to 4 minutes for complete development; II. twice as long, but the character of the negatives is the same.

For doubtful exposures, use I. or III. diluted with 15–20 volumes of water. At temperatures above 68° F., 5–10 drops of 10 per cent bromide should be added to each 100 cc of developer.

For much overexposed plates, stand-development is recommended. The developing trough is filled with this solution: water 1000 cc; I. 12 cc, potassium bromide solution (1:10) 2 cc, and the liquid cooled to 35–40° F. by pieces of ice. If the first traces of the picture appear in about 15 minutes, the plate is correctly exposed, and the developing can be finished in the same solution. If the image becomes visible sooner, the plate is to be placed without washing in an ice-cooled developer: water 100 cc, I. 4 cc, potassium bromide solution 4 cc. If on the other hand, no image appears in 30 minutes, the development is proceeded with in a solution of II. or IV., as recommended for snap-shots. In this way good negatives may be obtained, even with very great errors of exposure. (Apollo, 1901 : 282.)

Alkali in Developers Von Hubl calculates as follows the amounts of caustic soda necessary to produce phenolates with all the ordinary developers. This amount of alkali gives the best result in a developing solution. The figures in the first column give the amount of caustic soda to be used for every 10 g of developer, and the figures in the second column the amount of developer to be used in each 100 cc of solution. (If other alkalies are used, these figures in the first column must be multiplied by the following factors to obtain the amount to be used. Caustic potash, 1.4, potassium cabonate 10, sodium carbonate dry, 8, crystals 16. Ed.) Caustic alkalies must not be used with pyro or metol:

Pyrogallol	9.5 g	0.3-0.6 g
Pyrocatechin	7.2 g	0.6 g
Hydrochinon	7.2 g	0.5-1.0 g
Diphenal	5.0 g	
Glycin	4.3 g	1.0 g
Adurol	4.2 g	1.0 g
Paramidophenol	2.8 g	0.4-0.7 g
Metol	2.3 g	0.6 g
Eikonogen	1.5 g	0.8-1.5 g
Diogen	1.2 g	1.2 g
Amidol		0.4-0.8 g

(Das Atelier, 1901 : 180.)

THE CRUCIBLE

ON METHODS OF DEVELOPMENT

The editor of the "Photo-American" criticises savagely a statement made in the December Crucible, to the effect that a certain developer is "rich in alkali, so that it is especially adapted to underexposed plates and gray-day pictures." His statement is, "if a photographic magazine publishes such a statement as that it deserves . . . severe condemnation." Further on he remarks: "That rich alkali will only make snapshots very contrasty, and is far inferior to mild developer." Such condemnation from the self-recognized "Leading Photo Expert," makes us feel very badly, and we would like to have some one else in the same boat. So we turn to page 26 of the same issue of the "Expert's" magazine, five or six pages before this gentle rebuke, and we find this statement: "The method is to develop until the detail in the dark or shadow portion is fully obtained, even if one has to use very strong developer to accomplish it." Come into our boat, brother Newcomb! You can have a seat. Of course you did not write it, but you published it, and the sole purpose of the article is to advertise your ammonium persulphate to reduce these negatives made by "very strong developer." They must be reduced; contrast in a photograph is not the last word of the New York Camera Club. Three flat tones is the latest fashion. White and black are banished forever from photographs by the seceders. But brother Newcomb should really be more careful in the selection of his writers, or edit their manuscripts more thoroughly. On page 11, of this same issue, we find this: "So he went to work studying other fellows' work; and . . . he came to the conclusion that the pictures he liked had a good deal of black and white in them, and objects sticking up against the sky or water. And thus, crudely, was wafted to his inner consciousness the basic principle, that pictorial effect depends primarily upon contrast." And lest his readers should be a little surprised at this open defiance of the new pictorial laws of the seceders, he informs them that "Mr. A. G Marshall, who will contribute a series of papers during 1902 on art and its applications to the camera, under the title of "Fitzcharles and his Camera," is an artist of twenty years' experience, a teacher of great ability and a critic whose suggestions are invaluable. Our readers will make no mistake in opening correspondence with him. See advertisement." Better look over your manuscript the next time you put on your war paint, brother Newcomb.

Now, to descend to facts, what is the truth in this matter? Simply that the developer must be suited to the purpose. It is admitted that strong developers produce contrasts, and slow development with dilute normal developer gives soft plates. But the man who always wants a weak, soft plate is moving in a bad rut. That may be necessary in order to produce prints which will be accepted for publication by "Camera Notes," or which will satisfy a certain number of salon judges, who know that they know the last word in art. But there are yet left a few people who are so benighted as to sometimes want contrast and vigor in some of their pictures, and among those pictures are snapshots. A snapshot is seldom a candidate for salon honors. It is usually a picture of human interest, and not a carefully worked-out artistic conception. To be of interest it must tell its story at a glance: it must not be studied for ten minutes ere the figures emerge from their encircling gloom, a la salon. For this purpose it must have both contrast and detail, and to get both, a rapid, strong developer is best. Thus all the detail is brought out quickly and with little fogging of the plate, and if the high lights are too dense to print on the medium we want, we can use some of brother Newcomb's hermetically sealed persulphate of ammonia, put up in allopathic doses at the only "photo expert" laboratory in America. If we do not want to do this, we will suit our paper to our plate, and not vice versa.

The Round Robin Guild

Conducted by Elizabeth Flint Wade

(Any amateur photographer may belong.)

NETS VS. BAIT.

One of the pastimes of a summer vacation, spent on an island off the coast of Maine, was going out on the long pier which ran far out into the little harbor and watching the fishermen coming in, going out, setting nets and lobster traps, unloading their spoils, etc.

"Yes, ma'am" said a fisherman one morning, as I was examining with a great deal of curiosity the result of his 'haul,' "it's very surprisin', ma'am, what queer things ye ketches sometimes. Ye let down yer net and ye take the chances of gettin' nothin' worth havin'. There aint never no tellin' beforehand. Look at that feller there," pointing to a fish with a short, thick body and a big head, from the sides of which protruded two great staring eyes. "That's a sculpin, ma'am. He aint no manner of good neither fer bait ner fer eatin, but yer far more likely to git sculpins than ye be them fellers," pointing to a specimen of the thoroughbred among fishes, a slender, shining mackerel. "Now, ef ye want to be sure of gittin' mackerel, you've got to take mackerel bait and the right kind of tackle, an' ef ye want to git flounders ye've got to take flounder bait. Ye can't ketch trout with a shiny spoon, but pickerel will grab fer it in a minit. Yes, ma'am, ef ye take the right kind of bait and go where there's mackerel, ye'll git mackerel, but ef you scoop up fish with a net ye take yer chances, fer fishin' with a net is a chancy business."

Besides being my first summer at the seashore it was also my first summer with a camera, and I had taken great delight in the knowledge that I could make a photograph. I had my camera with me this particular morning. Below me, picking her way carefully along the slippery stones, was a summer neighbor, also a devotee to the use of the camera. We had exchanged photographic confidences, and found, to our mutual pleasure, that we both used the same make of camera. But alas, that I must record the fact, while I made photographs she made pictures which were at once my envy, my despair and my delight.

As I sat watching her, there came into my mind the homely philosophy of the fisherman, "ef ye want to ketch mackerel ye've got to take mackerel bait, but ef ye try to git 'em with a net ye've got to take yer chances." And it dawned upon me all at once that Miss Barker had been fishing for mackerel with mackerel bait and had caught mackerel, while I had been fishing for mackerel with a net, and the consequences were that I had caught more sculpins than mackerel. In other words, Miss Barker made up her mind what kind of a picture she wanted to make, and bent her efforts to securing it, while I had gone about making exposure after exposure, hoping that each one would turn out to be a picture worth the making.

The "fatal facility" with which photographs may be made is more often than not a bar to good work. Let the members of the Guild see to it, that they use bait instead of a net, and produce pictures instead of just photographs.

ENLARGEMENTS.

To the amateur whose photographic career is in its infancy, the possibility of making enlargements is at the very vanishing point of his photographic horizon. The word "enlargement," when used photographically, seems to presuppose such a profound knowledge of the art, that though he finds many descriptions of the process in his readings, he invariably skips them, and goes on to "something easier."

The making of enlargements is one of the simplest processes of photography, and it is in response to several queries in regard to the work, and also to induce others to attempt it, that we devote a little space to a description of the operation.

The photographic definition of "enlarging" is the projecting of the image of a negative through the lens on a sensitive surface— usually bromide paper—and after a suitable exposure, developing the enlarged image thus formed in the same way as one develops a bromide print made by contact printing.

The apparatus necessary for the making of an enlargement is usually already possessed by the amateur, so that the actual outlay for the experiment is the purchase of the bromide paper. One does not need a special lens. The lens which made the negative will make the enlargement.

The room chosen for the work must be one that can be easily darkened, and, if possible, should be situated on an upper floor, thus securing an unobstructed view of the sky. A north light is to be preferred. A reflector consisting of a large piece of white cardboard is placed on the outside window

sill at an angle of about 45°, and held in place by hook and string.

The window or windows — if there are more than one — are darkened by stretching over them opaque material. Heavy turkey red cotton is excellent for this purpose. The camera is next placed on a support high enough to bring it against the window glass. One of the most convenient ways of arranging the camera is to have a light board about five or six feet in length and one foot in width. At one end of this board a box large enough to hold the camera is fastened. The board is placed on a table, set near enough to the window so that the box comes close to it. The camera is placed on the box, and measurements taken and a hole cut in the window covering, just large enough for the ground glass of the camera to cover it. The support for the sensitive paper is made by taking a light wooden box — two feet by four is a convenient size — and covering the bottom with white paper, stretching it smoothly so that it will lie flat against the box, and tacking it into place at the sides. This box is set on end on the board which holds the camera, and the white paper turned toward the lens. The ground glass is taken from its frame, and in its place is put the negative from which the enlarged picture is to be made, and the frame put into the camera the film side of the negative toward the lens. If any light enters between the window and the camera, a piece of black cloth can be pinned around the end of the camera. A clear image is obtained by turning the lens forward or back, as in focussing for negative making, and by moving the box on which the image is thrown nearer to, or farther away from the camera. The nearer the lens is to the negative the larger will be the image thrown by it, and the farther away the lens is from the negative the smaller will be the picture.

If one has a camera from which the back is not removable, or has not bellows extension enough to allow a suitable distance between negative and lens, a substitute may be made by using two boxes, one of which telescopes into the other, the larger box being the size of the negative from which the enlargement is to be made, and the other just enough smaller so that it slips into the larger box easily.

A frame is fitted in the larger box for holding the negative in place, and the front of the smaller box has a lens board to which the lens is attached when making enlargements. This apparatus is very primitive, but quite as effectual as an expensive frame and bellows.

In place of the board for the camera one may use a table, but the advantage of the board is that the camera and support are quickly adjusted on the same plane, for the negative and the sensitive paper support must be exactly parallel to each other.

The apparatus — which takes nearly as long to describe as it does to make it — being in place, the image is focussed correctly and its position pencilled on the paper as a guide for adjusting the bromide paper. The lens is covered, and the sensitive paper put in place by the dark room lantern. It is wise to make an experimental print as a guide for exposure. Three or four small pieces of paper are exposed, one after the other, the length varying from thirty seconds to one and one-half minutes. These strips marked to distinguish them are developed, and the one which shows the most correct exposure is used as a guide for making the large print. After the print is made it is soaked in water for a minute or two, and then developed in the same way as a bromide print. Metol hydrochinon is an excellent developer for prints, giving soft velvety blacks and delicate half-tones. The tiny negatives made with a pocket camera often make fine enlargements.

In making enlargements one has a great deal of latitude in the matter of sharpness or definition. This picture may be focussed as sharply as the commercial photograph, it may be of a medium sharpness which gives something the effect of a wash drawing, or it may be so much out of focus that it will pass as one of the most pronounced "fuzzy-types."

ARCHITECTUAL PHOTOGRAPHY.

A correspondent, much interested in the proposed historical guilds, asks for some hints on architectural photography, as he proposes to photograph historical buildings, and wants to make as good pictures as possible. This is quite essential, for such pictures should be good both in technical and artistic finish.

To make correct pictures of buildings, one should use a rectilinear lens. The better class of hand cameras are fitted with rapid rectilinear lenses, but a view camera is to be preferred to the hand camera for architectural work.

The point of view is a very important consideration. The camera should never be placed directly in front of a building or facing an angle. If placed facing the angle, the lines converge either way, and give a peculiar effect to the picture. The time of day chosen should be either in the morning hours or late in the afternoon, the hour depending on the position of the sun to the building. The two sides of the

building should not be equally lighted, neither should the shadow side be so dark as to lose the detail. If the building is so situated that the camera cannot be placed far enough away to get the best effects, a wide angle lens may be used, though with a wide angle lens there is apt to be more or less distortion.

The rising and falling front is of special value in making pictures of buildings. The lens is raised to include the top of the building and to cut off the foreground.

A. G —Stops or diaphragms are usually a perplexing item for the beginner. The smaller the stop the less light enters the lens, and therefore the smaller the stop the longer must be the exposure. If with the stop marked f 8, it required an exposure of one second to make a picture, then for the next size, f 11, it would require just twice as long, two seconds; for f 16 it would require four seconds, and so on, doubling the time of exposure for each decreasing stop. The larger the stop used the more detail is obtained in the shadows. Focus with the largest stop, then adjust the stop to fit the picture.

D. S. S.— To dry a negative quickly take a piece of clean surgeon's cotton, dip it in water, and squeeze it well, then wipe off the superfluous moisture from the film, and lay the negative in a clean tray and flood it with alcohol. Let it remain two or three minutes, take it out, drain, and set in a draft. The alcohol has replaced the water in the film, and will evaporate very quickly. The negative should be dry in twenty minutes.

Notes and News

The midwinter dinner of the Photographers' Association of New England, in which the Lens and Brush Club of Boston joined, was given at the United States Hotel, Boston, on Friday evening, January 17. There were present over one hundred members with the invited guests. Mr. Geo. Edmondson of Cleveland, president of the Photographers' Association of America; Henry S. Klein of Milwaukee, vice-president; F. R. Barrows of Boston, treasurer, and C. R. Reeves of Anderson, Indiana, secretary, represented the executive committee of the Photographers' Association of America. The exercises were presided over by the genial president of the New England Association, Chas. W. Hearn of Boston, who presented as toastmaster of the evening, the popular ex-secretary, Henry A. Collings of Holyoke.

The executive committee, through the various speakers, reported $4,379.05 balance on hand in the national treasury January 1, and no outstanding obligations; that August 5, 6, 7 and 8, had been selected as dates for the next national convention to be held in the City Convention Hall, Buffalo, N. Y., and that no prizes would be awarded.

Mr. Wm. Armstrong spoke for the Lens and Brush Club, and Geo. H. Van Norman of Springfield, for the ex-presidents of the Association. Altogether the affair was a great success, and the committee in charge, to whom much credit is due, were Geo. H. Hastings, A. A. Glines, W. B. Parkinson and J. H. Garo. The committee desire to return special thanks, for generous support, to Messrs. J. Di Nunzio Co., Horgan and Robey, Benj. French & Co. and A. J. Lloyd & Co. all of whom helped to make the dinner a success.

KODAK COMPETITION — In the last number of the PHOTO ERA were given the details of a Kodak Competition in which $4,000 were offered as prizes. The prizes are two hundred in number, and vary in value from $5 to $150 for the best work done with the Kodak Camera. Competing prints should reach the Eastman Kodak Co., Rochester, N. Y., before Nov. 15, 1902. The offer is a generous one, and we predict a great success for the competition. Any reader wishing further information can have circulars giving the prize list on application.

CAMERA CRAFT — The January issue of this worthy publication has just come to hand, and is a handsome specimen of magazine work. The color-forms and beautiful half-tone plates, reproducing the choice pictures of the San Francisco Salon, are at once the envy, and despair, and delight of every true lover of the printer's art. We congratulate the editors upon the great success they have achieved, more especially because such triumphs as these make for the general uplift of photographic journalism, in which we all have a share.

PHOTO ERA

The American Journal of Photography

Published and copyrighted by the proprietor,
THE PHOTO ERA PUBLISHING COMPANY,
170 SUMMER ST., BOSTON, MASS.

THOS. HARRISON CUMMINGS, Editor.

Associate Editors:

M. O. SAMPSON, F. R. FRAPRIE.
HERBERT W. TAYLOR.

Entered at Post-Office, Boston, as second-class matter.

Contributions relating to photography in any and all of its branches will be received for publication.

SUBSCRIPTION RATES.

The annual subscription in the United States, Canada, and Mexico, is $1.50
In other Countries within the Postal Union . 2.00
Always payable in advance.
Single copies 15 cents each.

Advertising rates on application to the manager.

VOL. VIII. FEBRUARY, 1902. No. 2

February There is nothing that offers so much all-round enjoyment and profit as photography. During this month, snowy days and rainy days offer unlimited opportunities for the most artistic pictures. And when beauty and utility join hands, the pastime becomes a source of profit. Thousands of successful men and women artists and designers trace their success back to the time when they first began to use the camera. Even in this commercial age the most common articles of trade must appeal to the æsthetic sense to become saleable. The craving for beautiful things must be gratified, and we call attention to the article in this issue entitled Photography for Profit.

INVITATION HEEDED The author of the "Keely Cure, or How it Came to be Written;" "The Transcendentalists, a Comedy;" and "The Rule or Ruin School of Photography." Mr. Osborne I. Yellott (A Smiler), of Towson, Maryland, will address the Camera Club on January 28, at 8.30 P. M., upon the subject of "A Plea for Rationalism in Photography." You are invited to attend.
Camera Club, 3 West 29th Street.

We desire to acknowledge with gratitude the receipt of the above courteous missive sent with the compliments of Alfred Stieglitz; and we congratulate Mr. Stieglitz, and themembers of the N.Y. Camera Club upon their good fortune in securing the services of so distinguished and well informed a gentleman to enlighten them upon the subject of our Art Beautiful.

We will count it a rare pleasure to hear so gifted and cultured a person as Mr. Yellott of Towson, Md., unfold the true mission and scope of photography to those who, up to now, have been fit subjects for the famous epigram of the late Professor Jowett:

> Look at me, my name is Jowett,
> I am the head master of Balliol College.
> All there is to know, I know it,
> And what I know not, is not knowledge.

It is, however, a good sign when men are willing to listen to argument. A mind open to conviction is always headed towards the truth. And it is to be hoped, that the well known broad and liberal views on the subject of photography, held by Mr. Yellott, will be carefully weighed and considered by his hearers. We feel confident that the discussion will be carried out in the best of good nature, and will prove a source of enlightenment to all concerned.

A Unique Exhibit On February 17, in the Art Department of Jordan, Marsh & Co., Boston, will be hung an exhibit of photographs, representing some of the choicest work done in this country. Representative workers from the ranks of both amateurs and professionals have consented to contribute, and the public will have an excellent opportunity of judging the respective merits of the various photographic schools. We call special attention

to this exhibit here, because it is the first time the experiment is tried in which photography is seeking its public. The outcome will be watched with considerable interest.

A New Health Inspector Apropos of the recent small-pox scare, a novel use of photography has been discovered. It is a well-known fact that the camera will often record things invisible to the human eye. A certain amateur is reported on good authority to have recently been amusing himself taking snap-shots of his sister's friends. To his surprise, on the face and hands of one of the negatives, appeared a large number of of black spots, which he was unable to account for in any way. He put the prints in his pockets, and went to see the girl. On his way, he was met by the news that she had, during the night, been stricken with small-pox, and was already on her way to the hospital. The camera, to which all that is yellow is black, had detected and recorded the eruption, not yet visible to the human eye.

A Golden Opportunity Any of our readers having extra fine negatives of interesting subjects, made with lenses manufactured by the Bausch & Lomb Optical Co., Rochester, N. Y., would do well to communicate with them, stating size of negative and subject of picture, or better still, send a specimen print on approval, as a new catalogue is in preparation, and the Company desires to secure as large a variety as possible of photographs illustrating the special advantages of its different series of lenses. Kindly write or send prints at once, as the catalogue is now well under way. Address Advertising Department, Bausch & Lomb Optical Co., Rochester, N. Y.

Wonderful Discovery The photographs of the successive spectra of Nova Persei, taken from February 22 to September 5, of last year, give the life history of a fixed star, enacted in the brief space of a few months. The changes indicated in the pictures taken have been so rapid, that what we have thus far considered the process of ages, has been rushed through in a few days, and the Mosaic account of the Creation of the World in six days, has been strengthened rather than weakened by this latest discovery of photography.

On February 22nd the star was found to be at its greatest splendor. The Harvard College photographs show the spectrum of the star to have been of the Orion type with the first glimmer of bright radiation at the red side edges of the hydrogen line. Two days later it had changed from the spectrum of a white star to a composite spectrum of bright and dark lines; a change that, up to the present, was supposed to be worked out on a fixed star, only in the process of ages. On February 23rd, the scene changed. The increasing white heat and brilliant spectrum was suddenly obscured. The dark hydrogen lines were widened out, together with the bright lines, partly masking one another, extinguishing the bright edges. And on the 24th, the entire separation had taken place, showing that the collision of the two masses must have occurred sometime between these two nights. Later the star continued to decline in brilliancy steadily, until it had reached the seventh magnitude, on September 5th, thus furnishing visible proof of the nebular theory of Laplace; that the heavenly bodies are in a state of of continual evolution, from nebulae to suns and systems and vice versa: thus, through photography, leading to one of the greatest discoveries in the history of astronomy.

A Bibliography of Photography

ADELAIDE M. CHASE

PURPOSE AND SCOPE

This list is offered as a contribution towards a bibliography of photography, and does not claim to be a complete list of all books and periodical articles. The period covered is from 1860 to 1901, and includes English and American books and periodical articles, a few of the latter being exceptions and preceding 1860. The material has been collected from the usual catalogues and indexes, and from private manuscript notes and clippings. The classification is an alphabetical arrangement of subjects under the general subject of photography. The list of subject headings shows what classes have been made and what is included under each. The entries, under each class, are arranged alphabetically by authors for the books and alphabetically by title for the periodical articles. The bibliographical details of some entries are not complete, because it has been impossible to obtain copies of some of the publishers' catalogues, which are not included in the "Publishers' Trade List Annual" or in Whitaker's "Reference Catalogue." When a book appears on a dealer's catalogue, and the publisher cannot be found, the book is cited from such and such a dealer. Information as to the price of any book which is procurable may be had from the PHOTO ERA office.

The classification has been revised by Mr. F. R. Fraprie, associate editor of the PHOTO ERA, whom I have to thank for the valuable assistance which he has rendered me while preparing this list. Through his kindness, I was enabled to use the manuscript notes, clippings and catalogues of Mr. J. A. Tennant, editor of the "Photo-Miniature," and of Mr. C. F. Stiles, formerly associate editor of the PHOTO ERA, to both of whom I am greatly indebted for many items which are not to be found on the regular publishers' lists.

List of Subject Headings.

Aerial photography.
  Balloon photography.
  Kite photography.
Annuals.
Architectural photography.
  Interior photography.
Artistic photography.
Astronomical photography.
Bibliography.
Chemistry, photographic.
  Residues.
  Wastes.
Color photography.
Composite photography.
Criminal photography.
Daguerreotype.
Dictionaries and reference books.
  Formulas.
Enlarging and copying.
Exhibitions.
Exposure.
  Actinometers.
  Cameras.
    " , detective.
    " , hand.
  Exposure meters.
  Instantaneous photography.
  Marine photography.
  Night photography.
  Panoramic photography.
  Snow photography.
  Submarine photography.
Ferrotype.
Fiction.
General.
Handbooks and textbooks.

History.
Isochromatic photography.
Laboratory work.
Landscape photography.
Lighting, artificial.
  Flash lamps or light.
  Magnesium light.
  Magic lantern.
  Lantern slides
  Optical lantern.
  Slide-making.
  Transparencies.
Military photography.
Motion, photography of.
  Chronophotography.
  Cinematograph.
  Kinetoscope.
Negative processes.
  Calotype.
  Collodion.
  Developers.
  Development.
  Dry plate.
  Films.
  Fixing.
  Oxymel process.
  Talbotype.
  Tannin process.
  Waxed paper process.
  Wet plate
Patent and copyright.
Periodicals.
Photographers.
Photo-mechanical printing processes.
  Albertype.
  Collotype.
  Drawing for reproduction.
  Half-tone.
  Heliogravure.
  Line-blocks.
  Photo-aquatint.
  Photo-engraving.
  Photogravure.
  Photo-intaglio.
  Photo-lithography.
  Photo-mezzotint.
  Photo-zincography.
  Printing, photographic.
  Woodburytype.
  Zincography.
Photo-micrography.
Physics.
  Lenses.
  Optics.
  Photographic optics.
  Pinhole photography,
  Stenopaic photography.
  Telelectroscope.
  Telephotography.
Positive processes, general.
  Ceramic photography.
  Collodio-etching.
  Enamels, photographic.
  Glass decoration.
  Photo-ceramics.
  Photo-enamels.
  Printing, photographic.
  Transparencies.
Positive processes with chromates.
  Autotype.
  Carbon.
  Gum-bichromate.
  Ozotype.
  Photo-aquatint.
Positive processes with iron, etc.
  Blue print.
  Platinotype.
  Uranium printing.
Positive processes with silver.
  Bromide prints.
  Development.
  Fixing.
  Gold toning.
  Platinum toning.
  Toning.
Publications of societies.
Radiography.
Retouching, coloring and finishing.
  Coloring.
  Crystoleum painting.
  Enamelling.
  Framing.
  Glazing.
  Intensification.
  Mounting.
  Reduction.
Scientific applications.
  Lightning photography.
Spectroscopic photography.
Studios and portraiture.
  Portraiture.
  Silhouettes.
Surveying, photographic.
Trick photography.

Actinometers; see Exposure.

Aerial Photography

Luce, William Blake.

1. Kites and experiments in aerial photography. 1898. Hingham Centre, Mass.

Periodical articles.

Aerial panoramic photography. Nature. 1882. 26: 482.

Aerial photography. Nature. 1886. 34: 347.

Aerial photography. F. A. A. Talbot, Scient. Amer. 1900. 82: 314.

Aerial photography by kites. A. Batut. Scient. Amer. Sup. 1897. 43: 17705-17706.

Balloon photography. Nature. 1888. 32: 420-422.

Camera in mid-air. W. A. Eddy. St. Nicholas. 1900. 27: 725-728.

Photographing from kites. W. A. Eddy. Century. 1897. 54: 86–91.

Photography and the aerial graphoscope. Dublin Review. 1897. 120: 403–404.

Unusual uses of photography. G. T. Woglom. Scribners M. 1897. 22: 617–628.

Vote of subsidy for photographing Paris by captive balloons. Nature. 1882. 26: 231.

Albertype, see Photo-mechanical printing processes.

Annuals

American photographic almanac. Being an annual appendix to Humphrey's Journal of Photography. 1864–68. N. Y.

Amateur photographer's annual. 1891?—. Lond. Hazell.

American annual of photography and Photographic times almanac. 1887—. N. Y. Scoville.

Blue book of amateur photographers' British societies. 1893?—. Lond. Sprange.

Bolas's photographic annual. 18 ? Lond. Hampton, Judd.

British journal photographic almanac and photographer's daily companion. 1863—. Lond. Greenwood.

Fallowfield's photographic annual. 1891—? Lond. Fallowfield.

Ilford year book. 1893?—. Ilford, Eng. Ilford, Ltd.

International annual of Anthony's photographic bulletin and American process year book. 1889—. N. Y. Anthony.

Optical magic lantern journal and photographic enlarger almanac and annual. 1896—. Lond. Magic Lantern Journal Co.

Penrose's pictorial annual. 18—? Lond. Penrose.

Photographic dealers annual. 1900—. Lond. Marshall Brookes.

Photographic red book. 1901?—. Lond. Affiliation of Photographic Societies.

Photo-News year book. 18—? Lond. Dawbarn.

Photograms of the year. 1895—. Lond. Dawbarn.

Photographic annual. 1891?—. Lond. Adams.

Photography annual. 1889?—. Lond. Iliffe.

Wilson's photographic mosaics. 1864—. N. Y. E. L. Wilson.

Year book of photography and photographic news almanac. 1861—. Lond. Piper.

Year's photographs. 1901. Lond. Iliffe.

Architectural Photography

Cosgrave, E. MacDowell.

2. Photography and architecture. 1896. Lond. Dawbarn.

Middleton, George A. T.

3. Architectural photography, practical lessons and suggestions for amateurs. 78 p. 1898. Lond. Hazell. (Amateur photographer lib'y, no. 15.)

Mills, F. W.

4. Art and practice of interior photography. 1890. Lond. Simpkin.

5. Exterior and interior photography. 1895. Lond. Dawbarn.

6. Photography for architects. 1890. Lond. Iliffe.

Perkins, T.

7. Handbook to Gothic architecture; for photographers and others. 220 p. Lond. Hazell.

———, ———

8. Photographing interiors. 1901. N.Y. Tennant & Ward. (Photo-Miniature, no. 30.)

Periodical articles.

Architectural photography. H. Erichsen. Amer. Architect. 1897. 58: 73–74.

Photographing interiors. P. C. Headley, Jr. Outing. 1890. 17: 118–121.

Artistic Photography

Adams, W. I. L.

9. Sunlight and shadow. A book for photographers, amateur and professional. 141 p. 1897. N. Y. Baker & Taylor.

10. In nature's image, chapters on pic

torial photography. 110 p. 1898. N. Y. Baker & Taylor.

Andrews, John.

11. Studies in photography. A handbook to artistic photography. 1892. Lond. Hazell.

Bigelow, L. G.

12. Artistic photography. 1876. Phila. Benerman.

Caffin, Chas. H.

13. Photography as a fine art. 1901. N. Y. Doubleday, Page & Co.

D., W. G.

14. Pictorial selection in photography. 20 p. Sec. Croydon Microscopical and Natural History Club. 16 Wandle Road, Croydon, Eng.

Emerson, P. H.

15. Naturalistic photography. 3d. ed. rev. 460 p. 1898. Lond. Low.

Hearn, C. W.

16. Studies in artistic printing. 1877. Phila. Wilson.

Heighway, Wm.

17. Aesthetics of photography. 1889. Lond. Piper.

Hetherington, C.

18. Studies from leading photographers. N. Y. Anthony (Anthony's series, no. 35.)

Hinton, A. Horsley.

19. Practical pictorial photography. 1898. Lond. Hazell. (Amateur photographer lib'y, no. 17.)

Hodges, John A.

20. Pictorial landscape photography. 1901. Chicago. Photo-Beacon Pub. Co.

Johnson, Robert & Chatwood, Arthur B.

21. Photography, artistic and scientific. 1895. N. Y. Hurst.

Kemble, Marion.

22. Art recreations. 433 p. N. Y. Scovill.

Maclean, Hector.

23. Photography for artists. 150 p. 1896. Lond. Lund.

Robinson, Henry P.

24. Elements of a pictorial photograph. 1896. N. Y. Anthony.

25. Pictorial effect in photography. 1889. N. Y. Scoville. (Scoville photographic series, no. 30.)

26. Short chapters on art photography. 60 p. 1893. Lond. Hazell. (Amateur photographer lib'y, no. 4.)

Periodical articles.

Art and the camera. F. H. Day. Lippincott, 1900 65: 83–87.

Art in photography and photographic models. A. Van B. Berg. Cosmopolitan. 1896. 21: 22–29.

Art of photography Francis Frith. Art Journal. 1859. 11: 71–72.

Artist as photographer. T. Runciman. Art Journal. 1893. 45: 113–117.

Artistic aspects of figure photography. P. H. Emerson. Mag. of Art. 1891. 14: 310–316.

Artistic photography awheel. J. Nicol. Outing. 1897. 30: 339-340.

Artistic side of photography. H. Milford. Quart. Illustrator. 1894. 2: 321-328.

How to secure expression in photography. C. F. Jenkins. Cosmopolitan. 1899. 27: 131-136.

Impressions in photography G. Davison. Journ. Soc. Arts. 1890. 39: 65-74.

Is it an art? W. de W. Abney. Mag. of Art. 1880. 3: 302-304.

Is photography among the fine arts? Joseph Pennell. Lond. Contemp. 1897. 72: 824-836. Eclectic Mag. 1898. 130: 329-338. Living Age. 1898. 216: 99-109; (symposium) Mag. of Art. 1899. 23: 102-105,156-158,206-209, 253-256, 369-373.

Is photography an art? Rev. of Rev's. 1898. 17: 215 216.

Newer photography in art. Photographic art studies. Ill. Amer. 1898. 24: 507-512.

Photographer and the artist. Robert de la Sizeranne. Chautauquan. 1893. 17: 193-197.

Photographic art. Chamber's Journ. 1848. 9: 402-404.

Photographic art in Europe. P. G. Hamerton. International Rev. 1878. 5: 557-561.

Photography as a fine art. Spectator. 1887. 60: 964-965.

Photography as a fine art. Kathryn Staley. Munsey. 1896. 14: 582-591.

Photography as employed in the illustration of books. Art Journ. 1861. 13: 48.

Photography for portraits. Ronald Campbell. Art Journl. 1858. 10: 73-75.

Pictorial modification of photographic perspective. J. Soc. Arts. 1893. 41: 591-594.

Pictorial photography. Alfred Stieglitz. Scribners M. 1899. 26: 528-537.

Relations of photography to art. J. L. Breese. Cosmopolitan. 1894. 18: 137-144.

Snow as a subject for the camera. Rowland Briant. Studio. 1895. 5: 32-39.

Winter photography for the artist. H. P. Robinson. Art Journ. 1890. 42: 1-6.

(To be continued.)